

## 150mA, 75V Switching Diode

### FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- Compliance to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

### MECHANICAL DATA

- Case: 1206(Ceramics)
- Molding compound meets UL flammability classification rating 94HB
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 0.01g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$P_D$	500	mW
$I_{F(AV)}$	150	mA
$V_{RRM}$	75	V
$I_{FSM}$	2	A
$V_F$ at $I_F=100mA$	1.00	V
$T_J$ Max.	150	°C
Package	1206 (Ceramics)	
Configuration	Single die	



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	VALUE	UNIT	
Power dissipation	$P_D$	500	mW	
Repetitive peak reverse voltage	$V_{RRM}$	75	V	
Non-repetitive peak reverse voltage	$V_{RSM}$	100	V	
Forward current	$I_{F(AV)}$	150	mA	
Repetitive peak forward current	$I_{FRM}$	300	mA	
Non-repetitive peak forward surge current	$I_{FSM}$	tp = 1s square wave	0.5	A
		tp = 8.3ms single half sine wave	2.0	
Junction temperature range	$T_J$	-55 to +150	°C	
Storage temperature range	$T_{STG}$	-55 to +150	°C	

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP.</b>	<b>UNIT</b>
Junction-to-ambient thermal resistance	$R_{\theta JA}$	375	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP.</b>	<b>MAX.</b>	<b>UNIT</b>
Reverse breakdown voltage <sup>(2)</sup>	$I_R=100\mu\text{A}, T_J=25^\circ\text{C}$	$V_R$	75	-	V
Forward voltage per diode <sup>(1)</sup>	$I_F=100\text{mA}, T_J=25^\circ\text{C}$	$V_F$	-	1	V
Reverse recovery time	$I_F=10\text{mA}, I_R=10\text{mA}, R_L=100\Omega$	$t_{rr}$	-	4	ns
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$V_R=20\text{V } T_J=25^\circ\text{C}$	$I_R$	-	25	nA
	$V_R=75\text{V } T_J=25^\circ\text{C}$		-	5	$\mu\text{A}$
Junction capacitance	1 MHz, $V_R=0\text{V}$	$C_J$	-	4	pF

**Notes:**

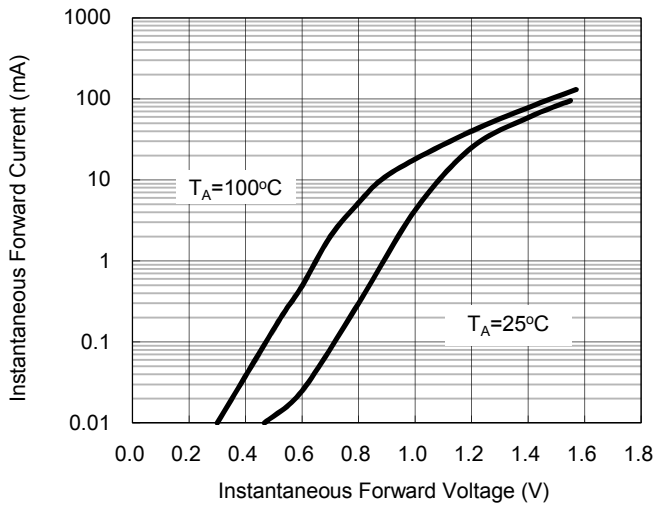
1. Pulse test with  $PW=0.3$  ms
2. Pulse test with  $PW=30$  ms

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
TS4148 RXG	1206	5K / 7" Reel
TS4148 RAG		10K / 13" Reel

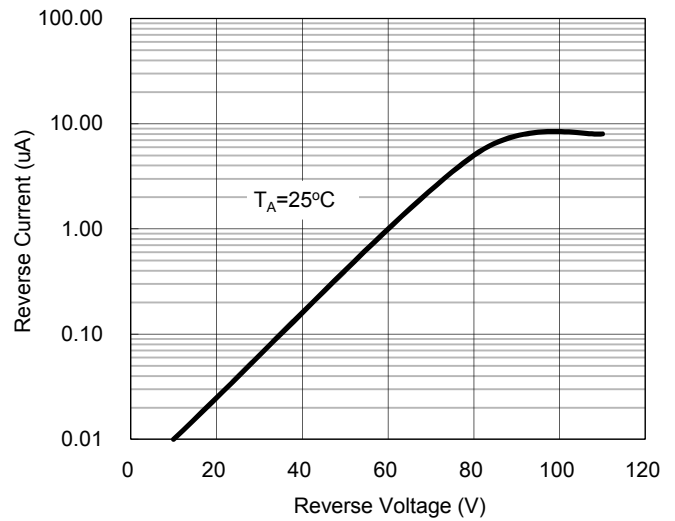
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

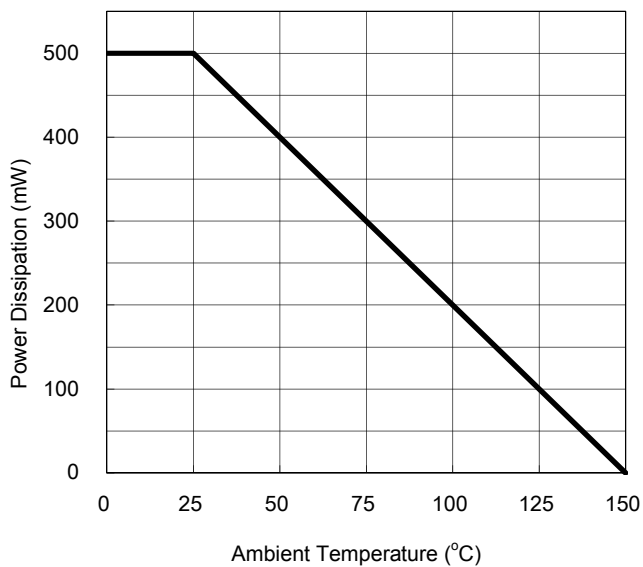
**Fig. 1 Typical Forward Characteristics**



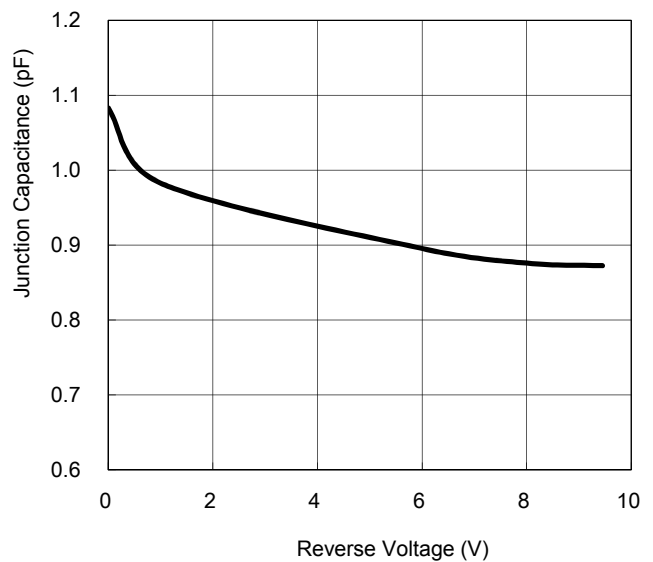
**Fig. 2 Reverse Current VS. Reverse Voltage**



**Fig. 3 Admissible Power Dissipation Curve**



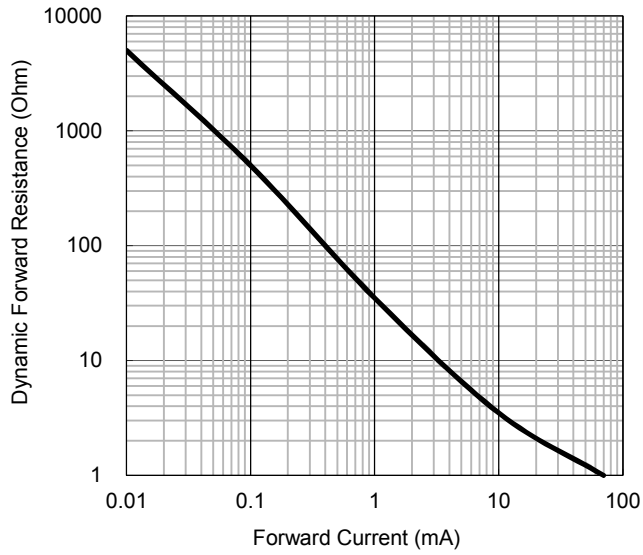
**Fig. 4 Typical Junction Capacitance**



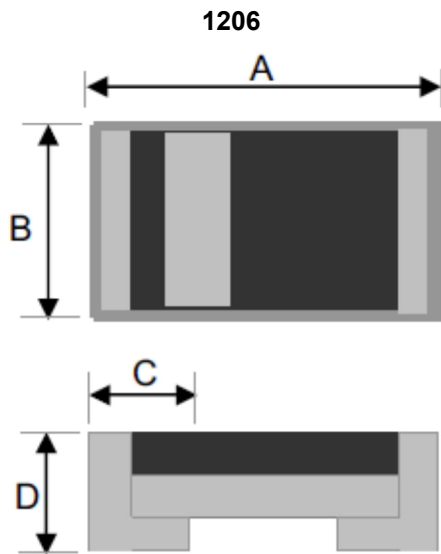
## CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig. 5 Forward Resistance VS. Forward Current**



**PACKAGE OUTLINE DIMENSION**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	3.00	3.40	0.118	0.134
B	1.30	1.70	0.051	0.067
C	0.35	0.75	0.014	0.030
D	0.65	0.85	0.026	0.033

## Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.